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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

JONAITIS, JUSTIN M

ART UNIT	PAPER NUMBER
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3752

NOTIFICATION DATE	DELIVERY MODE
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11/13/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/598,349	Applicant(s) FISCHETTI ET AL.	
	Examiner JUSTIN JONAITIS	Art Unit 3752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 August 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 8-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 August 2009 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings were received on 08/06/2009. These drawings are not acceptable, It appears element 2331 which was removed from the drawing to overcome the previous objection was intended to be the slot, which is claimed in the current set of amended claims.
2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the slot must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

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The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-6, 8-16 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The single locking element being formed as a single element including a slot is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). Specifically, the features can be seen in Figure 4, where the drawings as originally filed on 08/24/2006 show element 2331 (which was objected to in the previous office action). It appears element 2331 is supposed to define the slot (of amended claims 1, 8, and 12, however there is no disclosure of such in the specification.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

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claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-6, & 8-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. PG-Pub 2001/0007338 to Popp. in view of U.S. Patent #3,563,265 to Graham.

In re claim 1, Popp discloses a fluid injector comprising:

A housing (Body Tube (36)), a valve body (valve body (48)) and an actuator unit (actuator body (50)) that is inserted in the housing;

The valve body comprising a **cartridge (walls of valve body (48))** with a recess that takes in a **needle (valve (46))**, a **receptance which is formed on the needle (See Popp figure 3 for portion of valve (46) that is recessed)** and fixes a **locking element (keepers (78))** in an axial direction relative to the needle and a **spring rest body (Spring retainer (76))** which has a recess through which the needle protrudes and which takes in the locking element and fixes it in the radial direction relative to the needle, and a **return spring (Spring (66))** which rests on the spring rest body and is pretensioned in a way that it presses the spring rest body against the locking element.

Popp fails to disclose the locking element is formed as a single element and includes a slot for receiving the receptance of the needle laterally into the slot such that the locking element surrounds the needle except at the location of the slot.

Graham teaches it is known to use a locking element (spring clip (52)) which is formed out of a single piece with a slot (formed by legs (54)) which receives a receptance (recess (20))

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of the component which it is fastening in such that the locking element surrounds the component being fastened, in order to provide a releasably locked connection of components [column 3, lines 64-75].

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the keepers (78) of the Popp reference to be a one piece design similar to the spring clip taught by the Graham reference in order to provide a releasably locked connection of components.

In re claim 2, Popp discloses the invention as described above including the locking element is conically shaped on the surface facing the spring rest body and the recess of the spring rest body is correspondingly conically shaped.

In re claim 12, Popp discloses a fluid injector comprising a **housing (body tube (36))**, a **valve body (valve body (48))** and an **actuator unit (actuator body (50))** inserted in the housing, wherein the valve body comprises a **cartridge (walls of valve body (48))** with a recess that takes in a **needle (valve (46))**, a receptance which is formed on the needle (**See Popp figure 3 for portion of valve (46) that is recessed**) and fixes a **locking element (keepers (78))** in axial direction relative to the needle, and a **spring rest body (spring retainer (76))** which has a recess, through which the needle protrudes and which takes in the locking element and fixes it in a radial direction relative to the needle, and a **return spring (spring (66))** which rests on the spring rest body which is pretensioned in a way that presses the spring rest body against the locking element, where the locking element is conically shaped on the surface facing the spring rest body and the recess of the spring rest body is correspondingly conically shaped.

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Popp fails to disclose the locking element is formed as a single element and includes a slot for receiving the receptance of the needle laterally into the slot such that the locking element surrounds the needle except at the location of the slot.

Graham teaches it is known to use a locking element (spring clip (52)) which is formed out of a single piece with a slot (formed by legs (54)) which receives a receptance (recess (20)) of the component which it is fastening in such that the locking element surrounds the component being fastened, in order to provide a releasably locked connection of components [column 3, lines 64-75].

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the keepers (78) of the Popp reference to be a one piece design similar to the spring clip taught by the Graham reference in order to provide a releasably locked connection of components.

In re claims 3, 4, 13, and 14, as best understood by the examiner, Popp discloses the invention as described above including the housing comprising a double-tubed wall (defined by Body Tube (36) having an interior space (gas passageway (41)) before reaching the tube formed by the actuator body and valve body), which further has a fuel connector (port at the top of the injector) where the fuel is lead through the double-tubed wall towards the injection nozzle.

In re claims 5 and 15, Popp discloses the invention as described above including the injector having a fuel connector where the fuel is lead around the actuator unit to the injection nozzle.

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In re claims 6 and 16, Popp discloses the invention as described above including the fluid injector is turned into an open mode when actuated.

In re claims 8-11, Popp discloses the fluid injector including applicants claimed structural limitations as previously described but fails to disclose the method of assembling a fluid injector as described by the applicant as well as the locking element is formed as a single element and includes a slot for receiving the receptance of the needle laterally into the slot such that the locking element surrounds the needle except at the location of the slot.

However in regard to the method of assembly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to assemble the injector as described by the applicant because:

- Inserting a needle into a recess of a cartridge of a valve body is essential to the function of the injector
- Bringing a return spring into contact with a second spring rest, which is formed in the cartridge because the spring is a necessary component that must be in contact with a stationary surface in order to move the needle.
- Moving a spring rest body onto the needle until it is in a position which is closer towards the second spring rest than a than the receptance of the needle, because it's easier to attach the locking element into the receptance of the needle with the second spring rest out of the way pushing down on the spring.
- Allowing the spring rest body to move back until it contacts the locking element in the area of it's recess and in a way that takes in the locking element in the recess of the spring rest body, is essential for the function of the

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device and is designed in a manner (conical wedge shape) allowing this form of assembly.

- The step of inserting the valve body into a housing has to have been done in order to create the apparatus disclosed by Popp
- The step adjusting a pretension of the return spring is essential in order to make the apparatus disclosed by Popp Function
- The step of inserting the locking element into the receptance of the needle is performed from a radial direction relative to the needle also could not have been omitted because the receptance is extruded radially from the needle.

In regard to the locking element is formed as a single element and includes a slot for receiving the receptance of the needle laterally into the slot such that the locking element surrounds the needle except at the location of the slot. Graham teaches it is known to use a locking element (spring clip (52)) which is formed out of a single piece with a slot (formed by legs (54)) which receives a receptance (recess (20)) of the component which it is fastening in such that the locking element surrounds the component being fastened, in order to provide a releasably locked connection of components [column 3, lines 64-75].

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the keepers (78) of the Popp reference to be a one piece design similar to the spring clip taught by the Graham reference in order to provide a releasably locked connection of components.

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Response to Arguments

5. Applicant's arguments with respect to claims 1-6, 8-16 have been considered but are moot in view of the new ground(s) of rejection.

6. The claim objections of claims 5 and 15 disclosed in the non-final office action dated 04/15/2009 have been withdrawn due to applicant's amendment to the claims filed 08/06/2009.

7. The 112 second paragraph rejections of claims, 5, 7, 9-11, 15, and 17 disclosed in the non-final office action dated 04/15/2009 have been withdrawn due to applicant's amendment to the claims filed 08/06/2009

8. The drawing objections disclosed in the non-final office action filed 08/06/2009 have not been withdrawn, however as noted above in the new drawing objections and the 112 second rejection, the specifics of the locking element such as being formed of a single element with a slot are disclosed in Figure 4, but not specifically disclosed in the specification. Appropriate corrections are required.

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JUSTIN JONAITIS whose telephone number is (571)270-5150. The examiner can normally be reached on Monday - Thurs 6:30am - 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Len Tran can be reached on (571)272-1184. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JUSTIN JONAITIS/
Examiner, Art Unit 3752

/Dinh Q Nguyen/
Primary Examiner, Art Unit 3752